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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/574,197

Applicant(s)

BARTHOMEUF ET AL.

Examiner

RONALD T. NIEBAUER

Art Unit

1654

Period for Reply -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 September 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 13-28 is/are pending in the application.
- 4a) Of the above claim(s) 22-26 and 28 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 13-21, 27 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB-08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Applicants amendments and arguments filed 9/17/09 are acknowledged and have been fully considered. Any rejection and/or objection not specifically addressed is herein withdrawn.

Previously, Applicant's elected with traverse Group II (claims 13-21) and the following species

Bioreactor vessel: aeration tank

Substrate: water of industrial origin

Living cells: bacteria

in the replies filed on 7/29/08 and 11/28/08.

In the instant case, the elected species were found in the prior art. Any art that was uncovered in the search for the elected species that reads on non-elected species is also cited herein. In accord with section 803.02 of the MPEP the claims have been examined fully with respect to the elected species.

Claims 27-28 have been added as new claims.

Since applicant elected the substrate (election of species required a species of claim 19) of water of industrial origin, claim 28 is drawn to non-elected species.

Claims 22-26 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected invention, there being no allowable generic or linking claim.

Applicant timely traversed the restriction (election) requirement in the reply filed on 7/29/08 and 11/28/08.

Claim 28 is withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected invention, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in the reply filed on 7/29/08 and 11/28/08.

Claims 1-12 have been cancelled. It is noted that on page 13 of the reply that applicants state that claims 1-13 were previously cancelled. That is not accurate. Claims 1-12 have been cancelled.

Claims 13-21,27 are under consideration.

Claim Rejections - 35 USC § 112

Claims were previously rejected under 112 2nd. Since the claims have been amended and new claims added the rejection is updated.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 13-21,27 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 13 and dependent claims refers to a substrate. Claim 13 refers to the substrate as 'substrate (24)'. However, claim 14 for example refers to numeral 24 as 'sterile culture medium (24)'. Claim 15 refers to 'medium (24)'. Claim 13b recites 'cells present in the substrate'. As such, the identify of numeral 24 is unclear. The specification (page 7 line 19-31) provides a definition of substrate. The definition states 'the term 'substrate' denotes a medium containing a compound the metabolic conversion of which is envisaged...'. It is noted that claim 19 uses the

claim language 'a compound the metabolic conversion of which is envisaged' as well. However, the metes and bounds of the substrate are unclear. In particular, it is unclear which compounds have envisaged metabolic conversions and which compounds do not have envisaged metabolic conversions. The characteristics of a compound the metabolic conversion of which is envisaged is not clearly set forth. As such, there can be different interpretations as to whether or not a compounds metabolic conversion can be envisaged. Since, by definition the substrate is something to be envisaged, the substrate is dependent on ones subjective opinion. The specification does not provide a standard for envisaging compounds, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention.

Response to Arguments 112 2nd rejection

Since the claims have been amended, a new rejection adapted to the claims is recited above. Applicants arguments will be considered to the extent that they apply to the current rejection and claim set.

Applicants argue (pages 15-16) that the term substrate is discussed in the specification.

Applicants argue that the mention of (24) is inappropriate in the preamble of claim 13.

Applicant's arguments filed 9/17/09 have been fully considered but they are not persuasive.

Although Applicants argue (pages 15-16) that the term substrate is discussed in the specification, the mere discussion of a term does not mean that the term is clearly defined. In the instant case, the specification and claim 19 use the language 'a compound the metabolic conversion of which is envisaged'. The characteristics of a compound the metabolic conversion of which is envisaged is not clearly set forth. As such, there can be different interpretations as to

whether or not a compounds metabolic conversion can be envisaged. Since, by definition the substrate is something to be envisaged, the substrate is dependent on ones subjective opinion. The specification does not provide a standard for envisaging compounds, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention.

Although Applicants argue that the mention of (24) is inappropriate in the preamble of claim 13, the preamble of claim 13 mentions (24). Thus applicants expressly agree (page 15 of reply lines 18-20) that the claim language is inappropriate. Agreeing that the claim language is inappropriate does not overcome the rejection.

Claim Rejections - 35 USC § 103

Claims were previously rejected under 103 based on the references cited below. Since the claims have been amended and new claims have been added the rejection is updated.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later

invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 13-21,27 are rejected under 35 U.S.C. 103(a) as being unpatentable over WO 00/34433 (as cited in IDS 3/31/06; since WO 00/34433 is not in English the English equivalent Mutzel et al US 6,686,194 will be relied upon and referred to herein).

Mutzel teach a method and device for selecting accelerated proliferation of living cells in suspension (title, abstract). Mutzel teach the apparatus for continuous, periodical, or conditional culture conditions as recited in instant claim 13. Mutzel teach that the organisms used (title, abstract, claim 1,12, column 3 lines 54-60) can be prokaryotic or eukaryotic and specifically teach bacteria (column 3 line 65 for example) as recited in the instant claims, specifically claim 20. Mutzel teach that a recognized problem in the art is the lack of permanent proliferation of organisms in suspension and that previous techniques select static variants (column 1 lines 36-55). Mutzel teach that the present invention describes an automated genetics method which selects against static variants and prefers dynamic variants (column 2 lines 44-48,column 4 lines 39-42) as recited in claim 13b. Mutzel teach industrial application specifically for metabolizing chemical products such as environmental pollutants (column 2 lines 54-67) as recited in claim 19. In figures 1-16 and column 4 lines 4-42 Mutzel teach the components of the automatic device. Briefly, Mutzel teach 2 vessels (claim 1a and 4,6 of the figures) as recited in claim 14,15a; a system for connecting to culture vessels for sterilization or gas or substrate (claim 1e and 12,18,20-21 of the Figures) as recited in claim 14,15b-d,27; a system for connecting the devices (claim 1f) as recited in claim 14,15e; an outlet source to another device or bin (claim 4,

36 of the figures) as recited in claim 14. Specifically, Mutzel teach vessels (4,6), gas supply (12), medium source (18), sterilizing agent source (20-21), connecting conduits (22,24,30-32) which are described as valves (column 4 line 38, claim 2) and teach a conduit (36) for discharging the culture (column 4 lines 30-34, claim 4). It is noted that the valves taught by Mutzel are interpreted as means for connecting as recited in claim 15e. Mutzel teach that the selection is of living cells in suspension (claim 12) as in claim 16 of the instant invention. In claim 12 Mutzel teach the steps of claim 18 of the instant invention.

Mutzel does not expressly teach in a single embodiment a bioreactor connected to the selection device.

Mutzel teach that a recognized problem in the art is the lack of permanent proliferation of organisms in suspension and that previous techniques select static variants (column 1 lines 36-55). Mutzel teach that the present invention describes an automated genetics method which selects against static variants and prefers dynamic variants (column 2 lines 44-48, column 4 lines 39-42). Mutzel teach industrial application specifically for metabolizing chemical products such as environmental pollutants (column 2 lines 54-67) as recited in claim 19. Since Mutzel teach applications for metabolizing chemical products one would be motivated to use the selection device in such applications. In other words, one would be motivated to use the selection device in particular applications based on the express suggestions of Mutzel (column 2 line 54-67) and the recognized problem in the art (column 1 lines 36-55). Since Mutzel teach metabolizing chemical products one would use the appropriate bacteria to metabolize the products. In order to carry out such application one would connect the selection device of Mutzel with the appropriate

vessel/tank that holds the bacteria and chemical products as recited in claim 17. In fact, Mutzel recognize the use of culture vessels (column 1 line 15). More specifically, Mutzel specifically teach means making it possible for (see 36 of the figure and column 4 lines 35-42) sampling and transferring the cells from the selection device to the vessel/tank. In carrying out such method one would sample and transfer cells from the vessel/tank to the automation device and then use the selection system of Mutzel to eliminate static cells and transfer the dynamic cells to the vessel/tank as recited in instant claim 13. Since Mutzel teach periodic use of the selection system (claim 16) and teach that a recognized problem in the art is the lack of permanent proliferation of organisms in suspension and that previous techniques select static variants (column 1 lines 36-55) one would be motivated to periodically carry out the transfer of cells as recited in claim 21. It is noted that claim 21 recites 'at least once a week'. Carrying out the process once meets the limitation of once a week. Since Mutzel teach industrial application specifically for metabolizing chemical products such as environmental pollutants (column 2 lines 54-67) one would recognize that the vessel/tank with the pollutants would not require sterilization as recited in the instant claims. Mutzel expressly teach sterilization (abstract, claims) in the selection device as recited in the instant claims.

Since Mutzel teach that the present invention describes an automated genetics method which selects against static variants and prefers dynamic variants (column 2 lines 44-48, column 4 lines 39-42) one would have a reasonable expectation of success. Since Mutzel teach industrial application specifically for metabolizing chemical products such as environmental pollutants (column 2 lines 54-67) one would have a reasonable expectation of success in carrying out such methods.

In the instant case, all the claimed elements (briefly, the selection device of Figure 1 and claim 1 of Mutzel, and the culture vessels required for metabolizing chemical products such as environmental pollutants (column 2 lines 54-67)) were known in the art and one skilled in the art could have combined the elements as claimed by known methods with no change in their respective functions and the combinations would have yielded predictable results to one of ordinary skill in the art at the time of the invention.

Although unclear (see 112 2nd) the 'substrate' has been given the broadest reasonable interpretation to include any types of compound. In the instant case, Mutzel expressly teach chemical products such as environmental pollutants (column 2 lines 54-67).

From the teachings of the reference, it is apparent that one of ordinary skill in the art would have had a reasonable expectation of success in producing the claimed invention. Therefore, the invention as a whole was *prima facie* obvious to one of ordinary skill in the art at the time the invention was made, as evidenced by the reference.

Claims 13-21,27 are rejected under 35 U.S.C. 103(a) as being unpatentable over WO 00/34433 (as cited in IDS 3/31/06; since WO 00/34433 is not in English the English equivalent US 6,686,194 will be relied upon and referred to herein) and Hawkins (US 5,624,563).

As discussed in detail above, Mutzel teach a method and device for selecting accelerated proliferation of living cells in suspension (title, abstract). Mutzel teach the apparatus for continuous, periodical, or conditional culture conditions as recited in instant claim 13. Mutzel teach that the organisms used (title, abstract, claim 1,12, column 3 lines 54-60) can be prokaryotic or eukaryotic and specifically teach bacteria (column 3 line 65 for example) as

recited in the instant claims, specifically claim 20. Mutzel teach that a recognized problem in the art is the lack of permanent proliferation of organisms in suspension and that previous techniques select static variants (column 1 lines 36-55). Mutzel teach that the present invention describes an automated genetics method which selects against static variants and prefers dynamic variants (column 2 lines 44-48, column 4 lines 39-42) as recited in claim 13b. Mutzel teach industrial application specifically for metabolizing chemical products such as environmental pollutants (column 2 lines 54-67) as recited in claim 19. In figures 1-16 and column 4 lines 4-42 Mutzel teach the components of the automatic device. Briefly, Mutzel teach 2 vessels (claim 1a and 4, 6 of the figures) as recited in claim 14, 15a; a system for connecting to culture vessels for sterilization or gas or substrate (claim 1e and 12, 18, 20-21 of the Figures) as recited in claim 14, 15b-d, 27; a system for connecting the devices (claim 1f) as recited in claim 14, 15e; an outlet source to another device or bin (claim 4, 36 of the figures) as recited in claim 14. Specifically, Mutzel teach vessels (4, 6), gas supply (12), medium source (18), sterilizing agent source (20-21), connecting conduits (22, 24, 30-32) which are described as valves (column 4 line 38, claim 2) and teach a conduit (36) for discharging the culture (column 4 lines 30-34, claim 4). It is noted that the valves taught by Mutzel are interpreted as means for connecting as recited in claim 15e. Mutzel teach that the selection is of living cells in suspension (claim 12) as in claim 16 of the instant invention. In claim 12 Mutzel teach the steps of claim 18 of the instant invention. Further, it is noted that claim 18 states that the suspension 'can in particular be', thus it is not required to operate in the recited fashion.

Mutzel does not expressly teach the elected species of aeration tank as the bioreactor and water of industrial origin as the substrate.

Mutzel teach that a recognized problem in the art is the lack of permanent proliferation of organisms in suspension and that previous techniques select static variants (column 1 lines 36-55). Mutzel teach that the present invention describes an automated genetics method which selects against static variants and prefers dynamic variants (column 2 lines 44-48, column 4 lines 39-42). Since Mutzel teach industrial applications (column 2 lines 54-67) one would be motivated to use the device of Mutzel for various applications.

Hawkins teach a process and apparatus for treatment of wastewater (title, abstract, claims). Hawkins teach the use of organisms specifically bacteria for use in wastewater treatment (column 1 lines 24-29). Hawkins teach that lagoons (columns 1-2 connecting paragraph) or tanks (column 2 lines 40-60) are used for wastewater treatment as recited in instant claim 17. Hawkins recognize the use of aeration (abstract, column 3 lines 53-59). Hawkins teach that maintaining proper concentration of bacteria and insuring the continuous presence of bacteria are often goals of wastewater treatment and recognize that the changing bacterial environment may be undesirable to the process (column 3 lines 40-60). As such, Hawkins recognize what is well known in the art – that bacteria are useful for wastewater treatment and that various phases of treatment (see Figure 2) are often carried out during wastewater treatment. Further, Hawkins recognize that a problem in the art is that the bacteria are not always adapted to the culture conditions. Since Mutzel teach methods in which variants are selected that ‘are always better adapted to the culture conditions’ (column 2 lines 44-48) one would be motivated to use the device of Mutzel to improve the wastewater treatment process described by Hawkins. In addition

to applications involving metabolizing chemical products such as environmental pollutants (column 2 lines 54-67) one would recognize the utility of the device and method of Mutzel for other applications such as in wastewater treatment.

Taken together one would be motivated to use the selection device in particular applications based on the express suggestions of Mutzel (column 2 line 54-67) and the recognized problem in the art (column 1 lines 36-55). Since Hawkins teach that maintaining proper concentration of bacteria during wastewater treatment and insuring the continuous presence of bacteria are often goals of wastewater treatment and recognize that the changing bacterial environment may be undesirable to the process (column 3 lines 40-60) one would be motivated to use the method and device of Mutzel. In order to carry out such application one would use the wastewater system of Hawkins which includes the appropriate tanks and bacteria and couple the system to the device of Mutzel. Since Mutzel specifically teach means making it possible for (see 36 of the figure and column 4 lines 35-42) transferring the cells from the selection device one would be motivated to remove cells from the wastewater system, use the selection device of Mutzel and transfer the cells back to the wastewater system. In carrying out such method one would transfer cells from the wastewater system to the automation device and then use the selection system of Mutzel to eliminate static cells and transfer the dynamic cells to the vessel/tank as recited in instant claim 13. Taken together the references obviate the use of the elected species as claimed. Since Mutzel teach periodic use of the selection system (claim 16) and teach that a recognized problem in the art is the lack of permanent proliferation of organisms in suspension and that previous techniques select static variants (column 1 lines 36-55) one would be motivated to periodically carry out the transfer of cells as recited in claim 21. It is

noted that claim 21 recites 'at least once a week'. Carrying out the process once meets the limitation of once a week. Since Hawkins does not sterile conditions one would recognize that the system of Hawkins would not require sterilization as recited in the instant claims. Mutzel expressly teach sterilization (abstract, claims) in the selection device as recited in the instant claims.

Since Mutzel teach that the present invention describes an automated genetics method which selects against static variants and prefers dynamic variants (column 2 lines 44-48, column 4 lines 39-42) one would have a reasonable expectation of success. Since Mutzel teach industrial applications (column 2 lines 54-67) one would have a reasonable expectation of success in carrying out such methods.

In the instant case, all the claimed elements (briefly, the selection device of Figure 1 and claim 1 of Mutzel, and the wastewater system of Hawkins) were known in the art and one skilled in the art could have combined the elements as claimed by known methods with no change in their respective functions and the combinations would have yielded predictable results to one of ordinary skill in the art at the time of the invention.

Although unclear (see 112 2nd) the 'substrate' has been given the broadest reasonable interpretation to include any types of compound. In the instant case, Hawkins expressly teach wastewater (title, abstract, claims).

From the teachings of the reference, it is apparent that one of ordinary skill in the art would have had a reasonable expectation of success in producing the claimed invention. Therefore, the invention as a whole was *prima facie* obvious to one of ordinary skill in the art at the time the invention was made, as evidenced by the reference.

Response to Arguments 103 rejection

Since the claims have been amended, a new rejection adapted to the claims is recited above using the same references as in the previous rejection. Applicants arguments will be considered to the extent that they apply to the current rejection and claim set.

Applicants argue (pages 16-23) that Mutzel does not teach means making it possible to transfer the cells from the selection device to the vessel/tank.

Applicants argue that Mutzel teach an output conduit, but it is not connected to a non sterile bioreactor vessel nor is such teaching provided.

Applicants argue that Mutzel teach a selection apparatus run under sterile conditions but not a non sterile bioreactor.

Applicants argue that the selection device of Mutzel is not supplied with living cells from a non sterile bioreactor vessel.

Applicants argue that Mutzel does not suggest treating any substrate.

Applicants argue that Mutzel does not teach alternating sterile and non sterile conditions.

Applicants argue that the device does not have the same technical effect as Mutzel and one would not have a reasonable expectation of success.

Applicants argue that there is no rationale to modify.

Applicants argue (pages 23-25) that Hawkins provides solutions that are remote from the claims.

Applicants argue that Hawkins does not teach selecting cells under proliferation state.

Applicants argue that Hawkins does not teach an automated device.

Applicants argue that there is no rationale to modify.

Applicant's arguments filed 9/17/09 have been fully considered but they are not persuasive.

Although Applicants argue (pages 16-23) that Mutzel does not teach means making it possible to transfer the cells from the selection device to the vessel/tank, it is first noted that the instant rejection is a 103 rejection and as such any single reference does not necessarily anticipate the claims. Further, it is unclear where such limitations are recited in the claims. It is noted that the selection device as used in the claims is labeled as prior art (i.e. Mutzel) in Figure 3. Mutzel specifically teach means making it possible for (see 36 of the figure and column 4 lines 35-42) sampling and transferring the cells from the selection device to the vessel/tank.

Although Applicants argue that Mutzel teach an output conduit, but it is not connected to a non sterile bioreactor vessel nor is such teaching provided, it is first noted that the instant rejection is a 103 rejection and as such any single reference does not necessarily anticipate the claims. In the instant case, Mutzel teach a device for selecting living cells (see title). Further, Mutzel teach applications in which the selected cells are to be used. Mutzel teach industrial application specifically for metabolizing chemical products such as environmental pollutants (column 2 lines 54-67). As such, one would be motivated based on the suggestions of Mutzel.

Since Mutzel teach a device for selecting living cells (see title) one would be motivated to use the cells in the applications suggested by Mutzel (column 2 lines 54-67).

Although Applicants argue that Mutzel teach a selection apparatus run under sterile conditions but not a non sterile bioreactor, it is first noted that the instant rejection is a 103 rejection and as such any single reference does not necessarily anticipate the claims. In the instant case, Mutzel teach a device for selecting living cells (see title). Further, Mutzel teach applications in which the selected cells are to be used. Mutzel teach industrial application specifically for metabolizing chemical products such as environmental pollutants (column 2 lines 54-67). One would need some type of vessel to carry out the metabolizing of chemical products. Since metabolization of environmental pollutants does not require sterile conditions there is not reason to sterilize the environmental pollutants. As such, one would be motivated based on the suggestions of Mutzel. Section 2143G of the MPEP states: "The Courts have made clear that the teaching, suggestion, or motivation test is flexible and an explicit suggestion to combine the prior art is not necessary. The motivation to combine may be implicit and may be found in the knowledge of one of ordinary skill in the art, or, in some cases, from the nature of the problem to be solved. Id. at 1366, 80 USPQ2d at 1649." Mutzel recognize metabolizing chemical products as an application for using the selection device. Thus one would be motivated to carry out such application based on the suggestion and recognized problem in the art.

Although Applicants argue that the selection device of Mutzel is not supplied with living cells from a non sterile bioreactor vessel, it is first noted that the instant rejection is a 103 rejection and as such any single reference does not necessarily anticipate the claims. In the

instant case, Mutzel teach a device for selecting living cells (see title). Further, Mutzel teach applications in which the selected cells are to be used. Mutzel teach industrial application specifically for metabolizing chemical products such as environmental pollutants (column 2 lines 54-67). Mutzel teach that the organisms used (title, abstract, claim 1,12, column 3 lines 54-60) can be prokaryotic or eukaryotic and specifically teach bacteria (column 3 line 65 for example)

Although Applicants argue that Mutzel does not suggest treating any substrate, Mutzel teach industrial application specifically for metabolizing chemical products such as environmental pollutants (column 2 lines 54-67). Instant claim 19 expressly teaches pollutants of the environment as substrates. Thus the environmental pollutants as taught by Mutzel (column 2 lines 54-67) are substrates as recited in claim 19.

Although Applicants argue that Mutzel does not teach alternating sterile and non sterile conditions, it is noted that it is unclear where the instant claims recite alternating conditions. Since Mutzel teach industrial application specifically for metabolizing chemical products such as environmental pollutants (column 2 lines 54-67) one would recognize that the vessel/tank with the pollutants would not require sterilization as recited in the instant claims. Mutzel expressly teach sterilization (abstract, claims) in the selection device as recited in the instant claims. Thus, the sterilization would be as recited in the instant claims. If everything is sterilized then the bacteria would be eliminated and there would be no metabolizing of the chemical products.

Although Applicants argue that the device does not have the same technical effect as Mutzel and one would not have a reasonable expectation of success, it is noted that the instant claims are method claims. The prior art obviate the method steps thus the claim limitations are met. Since the method steps are carried out any effects would follow from the active steps. Since

the selection device (see Figure 3 of the instant invention) is the device of the prior art there is a reasonable basis that the device would carry out the active steps. Further, section 2143.02 II of the MPEP states that obviousness does not require absolute predictability.

Although Applicants argue that there is no rationale to modify, Section 2143G of the MPEP states: "The Courts have made clear that the teaching, suggestion, or motivation test is flexible and an explicit suggestion to combine the prior art is not necessary. The motivation to combine may be implicit and may be found in the knowledge of one of ordinary skill in the art, or, in some cases, from the nature of the problem to be solved. *Id.* at 1366, 80 USPQ2d at 1649." In the instant case, Mutzel teach a device for selecting living cells (see title). Further, Mutzel teach applications in which the selected cells are to be used. Mutzel teach industrial application specifically for metabolizing chemical products such as environmental pollutants (column 2 lines 54-67). As such, one would be motivated based on the suggestions of Mutzel.

Although Applicants argue (pages 23-25) that Hawkins provides solutions that are remote from the claims, it is noted that Hawkins is used in a multiple reference 103 rejection and as such any single reference does not necessarily anticipate the claims. Further, section 2123 of the MPEP states that alternative embodiments are not a teaching away.

Although Applicants argue that Hawkins does not teach selecting cells under proliferation state, it is noted that Hawkins is used in a multiple reference 103 rejection and as such any single reference does not necessarily anticipate the claims. Mutzel expressly teach (title and throughout) selecting such cells.

Although Applicants argue that Hawkins does not teach an automated device, it is noted that Hawkins is used in a multiple reference 103 rejection and as such any single reference does not necessarily anticipate the claims. Mutzel expressly teach a selection device (abstract, claims). In the instant case, all the claimed elements (briefly, the selection device of Figure 1 and claim 1 of Mutzel, and the wastewater system of Hawkins) were known in the art and one skilled in the art could have combined the elements as claimed by known methods with no change in their respective functions and the combinations would have yielded predictable results to one of ordinary skill in the art at the time of the invention.

Although Applicants argue that there is no rationale to modify, Section 2143G of the MPEP states: "The Courts have made clear that the teaching, suggestion, or motivation test is flexible and an explicit suggestion to combine the prior art is not necessary. The motivation to combine may be implicit and may be found in the knowledge of one of ordinary skill in the art, or, in some cases, from the nature of the problem to be solved. *Id.* at 1366, 80 USPQ2d at 1649." . In the instant case, one would be motivated to use the selection device in particular applications based on the express suggestions of Mutzel (column 2 line 54-67) and the recognized problem in the art (column 1 lines 36-55). Since Hawkins teach that maintaining proper concentration of bacteria during wastewater treatment and insuring the continuous presence of bacteria are often goals of wastewater treatment and recognize that the changing bacterial environment may be undesirable to the process (column 3 lines 40-60) one would be motivated to use the method and device of Mutzel. Further, since Mutzel teach methods in which variants are selected that 'are always better adapted to the culture conditions' (column 2 lines 44-

48) one would be motivated to use the device of Mutzel to improve the wastewater treatment process described by Hawkins.

Relevant Prior Art

The prior art previously made of record and not relied upon is considered pertinent to applicant's disclosure: US 2005/0115892 (and non-English equivalent FR 2836910, both cited in IDS 3/31/06) teach treating sludge (claim 1) via a bioreactor (Figure 1) using bacteria or yeasts for example (section 0022) and teach process automation (section 0086). Any rejection using US 2005/0115892 would be duplicative of the rejections set forth herein.

Conclusion

Claims were previously rejected under 112 2nd. Since the claims have been amended and new claims added the rejection is updated herein. Claims were previously rejected under 103 based on the references cited herein. Since the claims have been amended and new claims have been added the rejection is updated. Thus applicants amendments and addition of new claims have necessitated any new rejections.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after

the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to RONALD T. NIEBAUER whose telephone number is (571)270-3059. The examiner can normally be reached on Monday-Thursday, 7:30am-5:00pm, alt. Friday, EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cecilia Tsang can be reached on 571-272-0562. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Anish Gupta/
Primary Examiner, Art Unit 1654

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/Ronald T Niebauer/

Examiner, Art Unit 1654